

H.R.Hogg del. F.P.C. lith.

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West, Newman imp.

Eyes of Spiders of the sub-order Mygalomorphæ.

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7. On some Additions to the Australian Spiders of the Suborder Mygalomorphæ. By H. R. HOGG, M.A., F.Z.S.

[Received May 6, 1902.]

(Plate XIII.¹ & Text-figures 22-27.)

A numerous collection of Spiders belonging to the South Australian Museum, Adelaide, very kindly sent me by Professor Stirling, F.R.S., has enabled me to make some important additions to those I enumerated in a paper read to the Society last year (see P. Z. S. 1901, vol. ii. p. 218).

Of the subfamily *Actinopodine* there are no specimens. Its Australian genus *Eriodon* Latr. has been located at Perth in the West, and in Victoria and New South Wales to the East; so it might naturally be expected to exist in South Australia, but has not so far been recorded thence².

The *Otenizine*, on the other hand, are well represented, and I have to contribute to that subfamily two new genera, *Blakistonia* and *Dyarcyops*, of one species each, and to the Rev. O. P. Cambridge's genus *Aganippe* two new species. As the latter seem to form with *Eucyrtops* Pocock (antice *Aganippe*) *latior* Cambr. (Pl. XIII. fig. 5) and *Aganippe subtristis* Cambr. (Pl. XIII. fig. 6)

¹ For explanation of the Plate, see p. 142.

² I may here mention on the authority of the Rev. O. P. Cambridge that his species, *Eriodon formidabile*, has really only four spinnerets, as I suggested in the paper above cited, and not six, as originally stated (Journ. Linn. Soc., Zool. vol. x. 1868, p. 266).

an almost continuous series, I have reunited Mr. Pocock's genus with its parent.

From Tasmania we have two females of the subfamily *Migince*, which has hitherto comprised in its group *Migee* only two genera: *Migas* L. Koch, from New Zealand, and *Moggridgea* Sim., from South Africa. From both of the above these specimens differ essentially, and I have therefore constituted for them a new genus *Heteromigas*.

Of *Barychelinae* there are no fresh specimens.

Of *Avicularinae* one male and six females confirm our previous knowledge of *Selenocosmia stirlingi* Hogg, and I note below a few additional particulars. The male from Cockburn and two females from Broken Hill extend the known southern limit of this species to lat. 32° S. From Palmerston, in the Northern Territory, is a very fine specimen, having much in common with the above, but with a recurved instead of procurved thoracic forea. This has always been looked upon as a point of great persistence and of undoubted generic importance. I have therefore constituted for it a new genus, *Selenotholus*. A broken specimen included with these is marked *Australia* only. It belongs to the group *Eurypelmatea*, known only from S. America, and as the origin is not authenticated it is more probable that it has been imported from there than really found indigenous in Australia.

The *Diplurinae* are represented by specimens from numerous new localities, notably by examples of my genus *Chenistonia*, among which is a well-marked new species. A single male shows in an interesting manner the peculiar median tibial spur which has been the unique distinguishing characteristic of this genus; but it differs from it in having a strongly procurved thoracic fovea and posterior sternal sigilla away from the margin, with other differences looked on as generic characters, and I have accordingly thus distinguished it as the type species of a genus *Dekana*.

Five females from the Adelaide Hills, though lighter in colour, are, without the male, specifically undistinguishable from my Victorian species, *Chenistonia maculata*, from Macedon.

From Tasmania is a new species in the genus *Aname* L. Koch.

The Rev. O. P. Cambridge very kindly placed at my disposal a specimen (female), received by him from Sydney, of the group *Atracae* in the above subfamily. This, though somewhat paler than his description, is with little doubt L. Koch's *Hadronyche cerberaea*, also from Sydney, but the type specimen of the species not being available it is not certainly known.

The comparison enables me to assure myself that the male I had previously recorded from Macedon, Victoria, and thought might be the unknown male of this species, is certainly not the same. I therefore record the latter now as a new species, *Hadronyche meridiana*. The description appears in the above-mentioned paper (*loc. cit.* p. 274).

Out of 40 specimens sent me in this suborder, comprising examples of nine genera and eleven species, mostly from new

localities in South Australia, but one Tasmanian, no less than five genera and nine species are new, thus emphasizing the fact of how little the members of it move about in the course of very long periods of time.

To a New Zealand genus of the family Ctenizidæ I gave the name (Proc. Zool. Soc. 1901, vol. ii, p. 236) *Maoriana*, which I have since found to be preoccupied for a genus of Mollusca (Trans. N.Z. Inst. xxiii, p. 95). I therefore substitute for it the name *Cantuarina*, reminiscent of the Province from which the specimens named were sent to me.

I do not repeat the references for genera and species given in the paper quoted, as I look on this as supplementary to it.

Subfamily MIGINÆ.

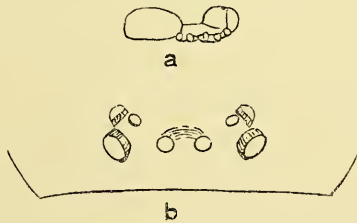
Group MIGEÆ.

HETEROMIGAS, gen. nov.

Heteromigas differs from *Migas* L. Koch in having a straight or slightly procurved thoracic fovea, instead of strongly recurved. The eye-space is broad instead of compact, covering about one-half the width of the frontal area. The clypeus is as wide as the whole eye-space, instead of the front median eyes only. The second and third joints of the superior spinnerets are compressed into the first joint, their presence being hardly more than indicated.

Type species, *H. dovei*.

Text-fig. 22.



Heteromigas dovei.

a, profile (nat. size); *b*, eyes.

HETEROMIGAS DOVEI, sp. nov. (Text-fig. 22.)

Cephalothorax, mandibles, lip, and maxillæ rather light yellow-brown, the eye-space black at each end and between the front middle eyes; sternum, coxæ, legs, and palpi somewhat brighter yellow, with dark grey or brown hairs, spines, and bristles; abdomen dark grey, without recognizable pattern.

The *cephalothorax* is rather longer than broad, narrowed posteriorly, but broad in front. The cephalic part is rounded

and rises abruptly from in front of the thoracic fovea almost as prominently as in *Eriodon*, the mandibles being continued in the same manner, but, as in all the *Migineæ*, falling nearly perpendicularly after a short, more or less kneed, horizontal length. The fangs are long and very powerfully formed, with a transverse section almost square by reason of four strengthening longitudinal ridges. There is no rastellum. On the inner edge of the falx-sheath are three large teeth, on the outer four, and five or six small, intermediate, near the base of the fang. The eye-space, three times as wide as long, extends half the width of the front of the cephalic part. The front median *eyes* are $1\frac{1}{2}$ diam. apart, and two of their diameters from the nearest point of the laterals, which are oval and two diameters of the median in greatest length. The whole row is slightly procurved.

The posterior row is recurved, shorter than the front row, and the laterals only slightly more in longer diameter than the front median. The rear median, in long diameter the same as these, are half that distance from the rear side and their diameter from the front middle. The clypeus is wide, the front median being removed from the margin by a distance equal to the whole breadth of the eye-space. The thoracic fovea is deep, wide, and nearly straight, but with a distinct tendency to procurvature.

The *maxille* are broad and nearly square, the lower outer corner being somewhat rounded. There are spines along the inner side margin but not along the lower side. The *lip* is as long as broad, slightly rounded in front, and in one piece with the sternum, though separated by a depression containing the anterior sigilla; it has no spines.

The *sternum*, smooth and strong, is piriform, narrowed, and slightly hollowed in front. The posterior sigilla are large and situated near the central line, the remainder marginal.

The *abdomen* is oval, $1\frac{1}{2}$ times as long as broad. The superior spinnerets are short and stout, the first joint making the whole of their length, and the second and third joints indicated by only slightly raised circular rims successively inside one another. The inferior spinnerets are cylindrical, truncate at top, about $1\frac{1}{2}$ diameters apart. The *palpi* are longer than in the *Migineæ* generally, more nearly approaching those of the *Ctenizidæ*. The femoral joints are much curved round the mandibles and as long as the patella cum tibia. The distal segment is broad at base, but tapering, and furnished with two rows of short, stout, curved spines as on the tarsus and metatarsus of the front two pairs of legs.

The *legs* are short and stout, the metatarsus and tarsus of the front two pairs being somewhat flattened and having two rows of stout, curved, spines along their inner and outer margins. The superior tarsal claws have two pectinations on the inner, and one long one near the base, on the outer margin. The inferior claw is smooth.

Two females from Table Cape, North Coast of Tasmania. Collected by Mr. Dove.

Measurements in millimetres.

	Long.	Broad.			
Cephalothorax ...	6	5			
Abdomen	$7\frac{1}{2}$	5			
Mandibles	3 total length. $1\frac{1}{2}$ horizontally.				
	Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.	
Legs	1.	2	4	4	3 = 13
	2.	2	4	4	3 = 13
	3.	2	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$ = $12\frac{1}{2}$
	4.	2	5	5	5 = 17
Palpi	$1\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	2 = $10\frac{1}{2}$	

Subfamily CTENIZINÆ.

The following synopsis will serve to distinguish the Australian and New Zealand genera:—

1. Abdomen corrugated, two strongly marked muscle-spots on upper side of abdomen. The eyes of the front row situated at the four corners of a trapezium markedly longer than broad *Idiosoma*. (Pl. XIII, fig. 8.)
- Abdomen smooth or hairy, but with no corrugations. Trapezium formed by the four eyes of the front row, in all cases broader than long ... 2.
2. Front row of eyes procurved; but a line touching the upper points of the laterals lies not more than $\frac{1}{2}$ their diameter below that touching the lower edge of the median pair 3.
- Front row of eyes so much procurved that a line joining the upper points of the laterals lies at least their diameter below one touching the lower edges of the median 5.
3. The line joining the centres of the rear row of eyes straight or recurved 4.
- The line joining the centres procurved *Dyarcyops*, gen. nov.
4. Posterior sternal sigilla moderate in size and marginal *Arbanitis*. (Pl. XIII, fig. 11.)
- Posterior sternal sigilla large and removed from the margin *Cantuarina*.
5. The line joining the lowest points of laterals of rear row of eyes passing below the centres of the median pair of the front row *Auidiops*. (Pl. XIII, fig. 9.)
- The line joining the lowest points of laterals of rear row of eyes passing above the upper points of the front medians 6.
6. The whole eye-space much broader than long ($1\frac{1}{2}$ – $2\frac{1}{2}$ times); the front two pairs of legs scopulated on tarsi only *Aganippe* (including *Eucyrtops* Poc.)
- The whole eye-space more nearly square, the breadth not exceeding $1\frac{1}{4}$ – $1\frac{1}{2}$ times the length; the metatarsi of front two pairs of legs scopulated *Blakistonina*, gen. nov.

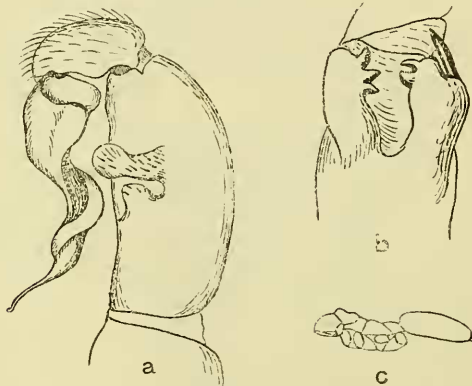
I append for comparison a series of diagrams of the eyes of members of this subfamily, showing the manner in which they vary. I have carefully measured the various specimens from which they are taken and drawn all to the same scale ($\times 10$).

Genus AGANIPPE Cambr.

Synopsis of Species.

- | | |
|--|--------------------------------|
| 1. The laterals of the front row of eyes one diameter only apart in male, at least | <i>A. smeatoni</i> , sp. nov. |
| The laterals of the front row of eyes not less than about two diameters apart | 2. |
| 2. The whole eye-space about $2\frac{1}{2}$ times as broad as long ... | <i>A. latior</i> Cambr. |
| The whole eye-space clearly less than twice as broad as long | 3. |
| 3. Lateral eyes of the front row about two of their diameters apart | <i>A. pulleinei</i> , sp. nov. |
| Lateral eyes of the front row more nearly four diameters apart | <i>A. substriata</i> Cambr. |

Text-fig. 23.

*Aganippe smeatoni.*

a, male palp; *b*, anterior end of tibia i. of male from inner side; *c*, profile (nat. size).

Genus AGANIPPE Cambr.

AGANIPPE SMEATONI, sp. nov. (Plate XIII. fig. 7 & text-fig. 23.)

Cephalothorax and mandibles rich yellow-brown; lip, maxillæ, sternum, and coxæ somewhat brighter, with rather pale yellow hair, short and fine, and short stout dark brown bristles. Legs yellow-brown, lighter than cephalothorax. Abdomen yellow above with darker brown median area, underneath dark yellow-grey; in some specimens the upper median area is almost black.

The *cephalothorax* is longer than broad, narrowed to nearly one-half both anteriorly and posteriorly, rounded at sides. The cephalic part rises gradually from a deep fovea and side depressions to the eye-space, behind which is a transverse depression. The cephalic fovea is straight or slightly procurved and lies at the bottom of an elliptical depression. A fringe of stout short procurved spiniform setæ runs round the margin of the thoracic area, and there are two broad depressions on each side from the end of the fovea to the margin.

The front median *eyes* are half their diameter apart, the laterals of the same diameter, three-fourths of a diameter away, lie in front of them near the margin of the clypeus, one diameter only apart. The clypeus is about half their diameter in breadth. The rear row is straight, the oval laterals of the same diameter as the front, total length of the row being twice that of the front lateral pair, or six long diameters. The rear medians are very round, half the diameter of the other eyes, four diameters apart, $1\frac{1}{2}$ from the laterals and the same from the front median.

The *mandibles* are short and protrude horizontally not more than one-fourth of the length of the cephalothorax. The *lip* is broader than long, straight in front, and without spines. There are a few spines on the inner side of the *maxille*, near the base; they are rather thickly covered with hair, straight in front, and only pointed in the middle of the basal end.

The *sternum* is ovate, rather wide posteriorly, covered with upright bristles on round bases. The posterior sigilla are as far from the median line as they are from the margin. The stigma of the male *palp* is rather long and twisted like a ram's horn; between the large bulb from which it springs and the metatarsal joint is a smaller bulb. On the tibial joint is a double apophysis thickly covered on the outside with short tapering three-sided spines.

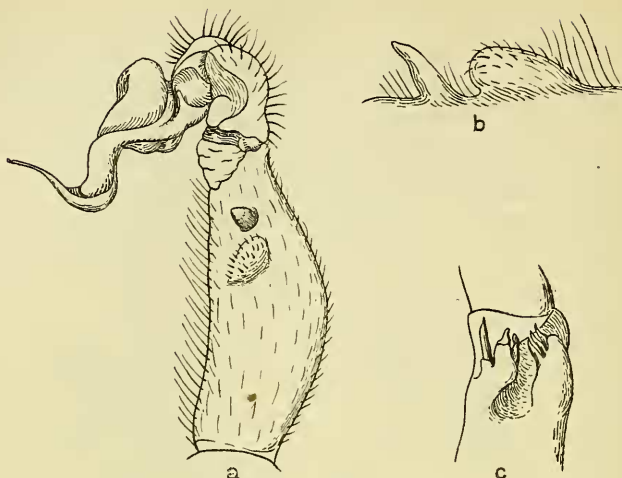
The *legs* are rather long and thin. The whole of the metatarsi are bespined; on the tarsi of all legs, except the first pair, are stout spiniform setae. The front two pair of tarsi are scopulated, but in one specimen, which shows no other difference, there is no scopula on tarsus i. A double apophysis at the anterior end of tibia i. has a stout spine and two horny knobs on the outer half, and three knobs, but no spine, on the inner. The superior tarsal claws have from 4 to 9 teeth, the inferior being bare. The abdomen is oval and is thickly covered on the upper side with stout spines on rounded bases. The superior mamillae are short and stout, the first joint longer than the other two together, the last being quite short.

There are four males sent by Mr. T. D. Smeaton, of Blakiston, but without locality indicated, and I have named the species after him.

The measurements in millimetres are as follows:—

		Long.	Broad.		
Cephalothorax ...	8		{ 4 front.		
			{ 7		
Abdomen	9		7		
Mandibles	4		2 horizontally		
				Pat. &	Metat.
	Coxae.	Tr. & fem.	tib.	& tars.	
Legs	1.	4	10	9	8 = 31
	2.	4	9 $\frac{1}{2}$	8 $\frac{1}{2}$	7 $\frac{1}{2}$ = 29 $\frac{1}{2}$
	3.	4	8	7	9 $\frac{1}{2}$ = 28 $\frac{1}{2}$
	4.	4	10 $\frac{1}{2}$	10	12 = 36 $\frac{1}{2}$
Palpi	3	5 $\frac{1}{2}$	5 $\frac{1}{2}$	2	= 16

Text-fig. 24.

*Aganippe pulleinei*.

a, male palp; *b*, apophyses on tibial joint of palp from side;
c, anterior end of tibia i. of male from inside.

AGANIPPE PULLEINEI, sp. nov. (Plate XIII. figs. 3, 4, & text-fig. 24.)

Cephalothorax, mandibles, lip, maxillæ, and sternum bright yellow, the eye-space mostly black; the coxæ and femora of the legs are orange, the patellæ and tibiæ darker; the metatarsus and tarsus yellow. On the mandibles are rather long brown hairs, but elsewhere the hairs are all changed to bristles, and on the legs and sternum into spines. The abdomen is yellow, with brown spinous setæ on the upper part.

The *cephalothorax* is longer than broad, narrowing in front to less than half its total width. The cephalic part, moderately raised and rather narrow, is bounded by a rather deep side depression. The fovea is straight or slightly procurved; a row of stout setæ extends round the margin. The *mandibles* are short but rather more protrudent than the last described, the fangs long and curved. There are seven rather small teeth on each of the edges of the falx-sheath and five quite small in an intermediate row.

The *lip* is at least twice as broad as long, slightly hollowed in front and without spines. The *maxillæ* are rounded at base and straight in front, without prominences. A few spines on the inner lower corner.

The *sternum* is piriform, half as broad in front as between 2nd and 3rd legs, clothed with short upright spinous bristles on bases. Posterior sigilla away from margin.

The *palpi* are twice the length of the cephalothorax, the tibial joint of the male being considerably swollen in the middle, and with two apophyses, one above the other, on the side. The stigma is $1\frac{1}{2}$ times as long as the bulb, and is twisted, but not so much as in *A. smeatoni*.

The front middle *eyes* are $1\frac{1}{4}$ diameters apart. In the male these are as large as the long diameter of the laterals, but in the female only $\frac{3}{4}$ ths. The front laterals are two of their diameters apart; they are in the male the long diameter away from the median, in the female $1\frac{1}{2}$. The rear row is recurved, both laterals and median oval, the latter in the female being as large as the front median, from which they are distant the diameter of the side eyes. They are somewhat nearer than this to those of the rear side, which are as long as the front side eyes. The trapezium formed by the rear median and front laterals is very slightly narrowed in front.

The *legs*, rather thin and tapering, are somewhat thickly covered with bristly spines. The apophyses at the anterior end of tibia 1 of the male are hardly to be distinguished from those of *A. smeatoni*. The pectinations on the superior tarsal claws vary from 7 in front to 3 on the outer rear claw.

The *abdomen* is oval, the upper side being furnished with spiniform setæ, both upper and under side are covered with short fine hair.

The superior spinnerets are short and stout, the first joint longest, the third quite short. The inferior are one diameter apart.

The female is coloured the same as the male, and is probably not fully grown; except in the smaller size of the front middle eyes she does not differ from the males, and comes from the same locality, so that I take them to correspond. Three males and the female come from Blakiston, and one male from the coast at Hallett's Cove. I have named them after the sender of the latter, Mr. W. Palleine, jun.

Measurements in millimetres.

	Male.		Female.	
	Long.	Broad.	Long.	Broad.
Cephalothorax ...	10	{ 4 8 $\frac{3}{4}$	8 $\frac{1}{2}$	{ 5 front. 7
Abdomen	11	9	10 $\frac{1}{2}$	8 $\frac{1}{2}$
Mandibles	{ 4 $\frac{1}{2}$ 4 horizontally.		5 4 horizontally.	4 horizontally.

Male.

	Coxæ.	Tr. & fem.	Pat. & tib.	Metat. & tars.		
Legs	1.	5	11	11	11	= 38
	2.	4 $\frac{1}{2}$	11	11	11 $\frac{1}{2}$	= 38
	3.	4	10	9 $\frac{1}{2}$	13	= 36 $\frac{1}{2}$
	4.	4 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	17	= 46 $\frac{1}{2}$
Palpi	4 $\frac{1}{2}$	7	6 $\frac{1}{2}$	2		= 20

Female.

		Coxæ.	Tr. & fem.	Pat. & tib.	Metat. & tars.		
Legs	1.	4	6	6	4	=	20
	2.	3½	6	6	4	=	19½
	3.	3	6½	5½	5½	=	20½
	4	3½	8½	8½	7½	=	28
Palpi		3½	5½	4½	3	=	16½

DYARCYOPS, nov. gen.

Dyarcycops differs from *Arbanitis* L. Koch, to which it is allied, in having both rows of eyes procurved, the front median eyes more than their diameter apart, the cephalic part of the cephalothorax comparatively high, the thoracic fovea straight, deep, and long; it has only a few pectinations on the superior tarsal claws; and, from the greater procurvature of the front row, the whole eye-space is longer in comparison with its breadth than in the above-named genus.

Type species, *D. andrewsi*.

DYARCYOPS ANDREWSEI, nov. sp. (Plate XIII. fig. 10 & text-fig. 25 a.)

Cephalothorax dark reddish brown, with fine yellowish-brown hair; mandibles darker still, with brown hair or bristles. Sternum, lip, maxillæ, and coxæ rich yellowish brown, with long brown hair, rather inclined to yellow on the maxillæ and red on the fringes. Legs and palpi yellow-brown, abdomen dark grey reticulated spots on yellow-brown ground.

The thoracic part of the *cephalothorax* is rather flat, the cephalic part rising somewhat abruptly from in front of the fovea, which is broad, deep, and transversely straight.

The whole cephalothorax, somewhat broad in front, is one-third longer than broad, and longer than the patella and tibia of any of the legs. The mandibles are large and extend below the base of the cephalothorax. The abdomen is ovate, rather straight in front: the superior spinnerets short and stout, the first joint longer than the other two together, the third quite short and almost hemispherical; the inferior one diameter apart.

The front row of *eyes* is strongly procurved, the laterals 1½ diameters of the medians, having their highest part below the lower margin of the latter pair, which are one and a third of their diameter apart. The rear side eyes are slightly smaller than the front, and separated from the latter by two of their own diameters. The centres of the rear medians are on a level with the upper part of the laterals, making the whole row clearly procurved. The total eye-space is well raised up and 1½ times as broad as long.

The *mandibles* are stout and long, well arched, and their lowest point reaches to below the level of the sternum. The fangs are long and powerful. The rastellum consists of two rows of stout

teeth, reaching halfway across the front and some distance up the inner edge of the falx. The teeth on the falx-sheath consist of five large and three smaller on the inner edge and five at the lower end of the outer edge.

The *maxillæ* are broad, straight in front, with only a small protuberance on the inner corner. The lower end is rounded and curved in round the lip, that portion being rather thickly studded with spines. The *lip* is sunk below the *maxillæ*; it is about as long as broad, straight in front, and without spines.

The *sternum* is broadest opposite the third pair of *coxæ*, where the fourth pair of *sigilla* show prominently a little away from the margin, the others being marginal.

The *abdomen*, rather deeply pitted, is covered with fine hair and a few bristles on roots on the upper side; it is longer than broad, somewhat ovate truncate in front and rounded at rear. The superior spinnerets are short and stout, the first joint longer than the other two together, the third being almost hemispherical; the inferior pair are about their diameter apart.

The *legs* are rather short and stout, the fourth pair scarcely longer than the first. The metatarsi and tarsi of front two pairs are thickly scopulated, but none on either joint of third and fourth pair. The superior tarsal claws are long, stout, and strongly curved, having one longish pectination near the base on the outer claw and two on the inner. The third claw is smooth, and there is one pectination at the base of the female palp-claw.

Four females (two not quite adult), taken by Mr. F. W. Andrews at Mount Compass, South Australia.

Measurements in millimetres.

		Long.	Broad.		
Cephalothorax ...		12	} 7 in front. 9		
Abdomen		11		7	
Mandibles		6½	4 horizontally.		
		Coxæ.	Tr. & fem.	Pat. & tib.	Metat. & tars.
Legs	1.	5	11	10	8 = 34
	2.	4½	9	9	7 = 29½
	3.	3½	8	6	7 = 24½
	4.	4½	10	11	9 = 34½
Palpi.....		5	9	7½	5 = 26½

BLAKISTONIA, nov. gen.

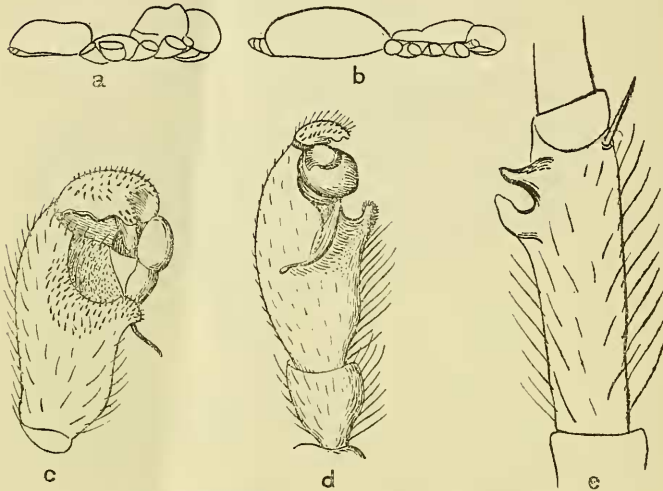
I have somewhat doubtfully constituted a new genus for two females from the same neighbourhood as the two new species of *Aganippe*, which I call, after the locality, *Blakistonia*.

It differs from *Aganippe* in the much squarer eye-area; the rear side eyes are larger than any of the others. The lip is as long as broad, furnished with short, stout, unusually tapering spinules;

the third joint of the spinnerets only slightly shorter than the second; stouter legs, the metatarsi of the front two pairs scopulated, all tarsi bespined, and different type of apophyses on tibia i. of male.

Type species, *B. aurea*.

Text-fig. 25.



Dyarecyops andrewsi (a) and *Blakistonina aurea* (b-e).

a, b, profiles (nat. size); c, male palp from inner side; d, male palp from outer side; e, tibia i. of male from under side.

BLAKISTONIA AUREA, sp. nov. (Plate XIII. figs. 1, 2, & text-fig. 25 b-e.)

Female. Cephalothorax dingy yellowish brown, mandibles brown, rastellum nearly black, lip and maxillæ yellowish brown; sternum pale yellow, with deeper orange spots; legs yellowish brown, with dark grey hair on patella, tibia, tarsus, and metatarsus; abdomen bright golden yellow, with pale yellow hair on both upper and under side.

The *cephalothorax* is longer than broad by nearly one-fourth, and only one-fourth narrower in front and rear than in the widest part. The cephalic part is well raised up from the slightly procurved thoracic fovea, bounded by side depressions and highest behind the eye-space. The mandibles are prominent, more than one-third the length of the cephalothorax horizontally. Teeth as in male.

The eye-space is unusually depressed, in fact barely raised up at all. The front median *eyes* are their diameter apart; the laterals, which are $1\frac{1}{2}$ diameters of same, are two of their own diameters apart, two diameters of the median away from the latter, and situated on the margin of the clypeus, thus forming an

entirely separate row. The centres of the rear row are in a straight line, all four eyes oval and longitudinally parallel. The long diameter of the median equals that of the front middle eyes, and the rear laterals, twice the length of these, are one-third of their length away from the medians, which are not quite three of their own long diameters apart.

The *lip* is as long as broad, very convex, rounded at the base, and straight in front. It is furnished with rather thick ordinary bristles and stout spines on the upper half, tapering from base to point. The *maxillæ* are rather wide, rounded at the lower outer corner and curving round the lip. They are straight in front. On the inner lower corner they have an area with spines, much like those on the lip, but longer.

The *sternum* is piriform, narrowest in front; the posterior sigilla are moderate in size, about their diameter from margin, the remainder close to it.

The *legs* are rather short and stout. The metatarsus and tarsus of front two pairs somewhat flat, thickly scopulated, and particularly short, with stout spines on the under side of both joints. The superior tarsal claws have from one to three long basal pectinations only and are much curved. The third claw is small and bare.

The *abdomen* is oval, with fine down-lying hair and long fine bristles on the upper part. The superior spinnerets are short and stout. The first joint about equal to the other two, the third hemispherical at the anterior end. The inferior spinnerets are very small and about their diameter apart.

Male. Colouring like the female. The long dark spinous bristles on the upper part of abdomen give the latter a darker colour than in the female (supposed). The under side also is covered with thicker and longer brown hair.

The front median *eyes* are of the same diameter as the front laterals, the former $\frac{1}{2}$ and the latter $1\frac{1}{4}$ diameters apart. The rear row is straight, the laterals being in long diameter larger than those of the front row. The whole eye-space, though of the same proportionate length and breadth, is only two-thirds the size of that of the (supposed) females, but the eyes appear closer together owing to their larger comparative size. A long median row of long spinous bristles runs from near the thoracic fovea to the margin of the clypeus.

The *lip* and *maxillæ* are unbespined. The sternum is pear-shaped; the posterior sigilla away from margin, small and apparently slightly convex. The teeth on the inner edge of the falx-sheath are small and six in number. On the outer edge and intermediately are 14 or 15 spread indiscriminately, some very small. The *legs* are long and rather thin. The superior tarsal claws have five or six pectinations. The tarsi of the front two pairs only are scopulated and the anterior end of the metatarsus. Near the anterior end of tibia 1 are two horny apophyses longitudinally, one below the other on the inner side. There are spines on all metatarsi and on tarsi 3 and 4, but not on 1 and 2.

On the outer side of the tibial joint of the palpi is one apophysis near the anterior end, its upper side covered with small triangular spinules and a considerable area behind it. The cap of the metatarsal joint is also similarly covered with spinules. The stigma is nearly twice the length of the bulb, pointed at the end and twisted into a thin laminated sheet about the middle.

One male from Lower North Road, Adelaide.

Four females from Blakiston and the Mt. Lofty ranges.

Measurements in millimetres (female).

	Long.	Broad.
Cephalothorax ...	11	{ 4 in front. 8
Abdomen	16	11
Mandibles	4 horizontally.	
Superior spinnerets	2, 1, $\frac{3}{4}$ = $4\frac{1}{4}$.	

		Coxæ.	Tr. & fem.	Pat. & tib.	Metat. & tars.		
Legs	1.	$4\frac{1}{2}$	8	$7\frac{1}{2}$	$5\frac{1}{2}$	=	$25\frac{1}{2}$
	2.	4	$7\frac{1}{2}$	7	$5\frac{1}{2}$	=	24
	3.	4	7	$6\frac{1}{2}$	5	=	$22\frac{1}{2}$
	4.	$4\frac{1}{2}$	8	10	8	=	$30\frac{1}{2}$
Palpi.....		$4\frac{1}{2}$	7	6	4	=	$21\frac{1}{2}$

Measurements in millimetres (male).

	Long.	Broad.
Cephalothorax ...	7	{ 4 in front. 6
Abdomen	7	4
Mandibles	3	2 horizontally.

		Coxæ.	Tr. & fem.	Pat. & tib.	Metat. & tars.		
Legs	1.	$3\frac{1}{2}$	8	9	8	=	$28\frac{1}{2}$
	2.	3	$7\frac{1}{2}$	8	$7\frac{1}{2}$	=	26
	3.	3	6	$6\frac{1}{2}$	$7\frac{1}{2}$	=	23
	4.	3	8	10	10	=	31
Palpi.....		3	5	5	2	=	15
Spinnerets	1,	$\frac{3}{8}$,	$\frac{3}{8}$	= $1\frac{3}{4}$.			
Inferior do.	very small, about $\frac{1}{4}$, and close together.						

Subfamily AVICULARINÆ.

Group SELENOCOSMIÆ.

SELENOTHOLUS, nov. gen.

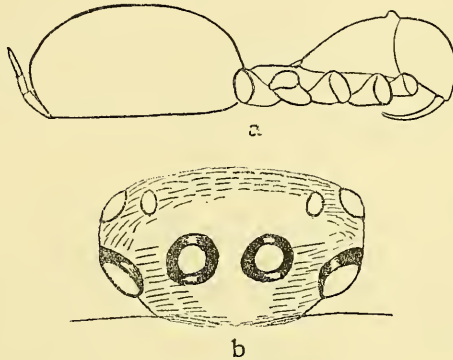
Differs from *Selenocosmia* in having the thoracic fovea recurved. Rear and front legs of equal stoutness.

Type species, *Selenotholus foelschei*.

SELENOTHOLUS FOELSCHER, nov. sp. (Text-fig. 26.)

Female. The cephalothorax is reddish, covered with short yellow to yellow-brown hair. Mandibles darker, with thick, but smooth downlying yellow-brown hair, darkest in front; fangs black-brown, but the outer side by palp bright red. Lip and maxillæ red-brown with reddish hair. Sternum and coxæ deep brown: rest of legs and palpi same as mandibles; the patella of third and fourth pairs somewhat darker. The abdomen, both upper and under sides, is a rich golden brown covered with smooth glossy hair.

Text-fig. 26.

*Selenotholus foelscheri.*

a, profile (nat. size); b, eyes.

The *cephalothorax* is one-eighth part longer than broad, sloping moderately upwards from the clearly-recurved thoracic fovea lying between the second and third pair of legs to the eye-space, which is more than $2\frac{1}{2}$ times as broad as long and situated on a tubercle, $3\frac{1}{2}$ mm. \times 2, reaching to the margin of the carapace.

The front row of *eyes* is slightly procurved, the median pair $1\frac{1}{2}$ diameters apart and $1\frac{1}{4}$ of their diameter from the laterals; they are of a bright orange colour, standing on transparent black rims, which I have not allowed for in their size. The front laterals are $1\frac{1}{2}$ times the diameter of the median, and, together with the rear row, are of a pale yellow. The rear row is straight; the laterals, half the diameter of the front laterals, are as far from them as the latter from the front median. The rear median, slightly smaller than the laterals in long diameter, are their breadth away from the latter and twice their length from the front median and ten times their own breadth, or five diameters of the front middle, apart.

The *mandibles* are thickly covered with close-lying hair, the fangs long and powerful, the inner margin of falx-sheath furnished with about 12 large teeth, and the intermediate area with about 50 smaller, reaching almost to base of fang. The stridulating-

organ on the outer side of the falx is spread over a more or less oblong area, and consists of series of sharp spines placed in very regular rows. The corresponding portion on the base of the palpi is a long oval area of spines, shorter and broader but generally similar.

The *maxille* are broad, rounded at the base, curved round the lip, and moulded at the inner upper corner into a well-defined prominence; club-shaped spines are numerous across the base, and a few stretching up the lower part of the inner side. The *labium* is broader than long, hollowed in front, and has a thick cushion of spines extending from the inner edge to halfway down the front.

The *sternum* is as broad as long, truncate in front; the posterior sigilla, large and oval, are situated nearer to the median line than to the margin. It is only slightly convex and thickly covered with matted hair. The *legs* are rather equally stout, there being no difference between the first and fourth pairs. The scopulæ on all the tarsi are integral, on the metatarsi of the front two pairs they reach to the base, nearly so on the third pair, and halfway up on the fourth. There are no spines on any of the legs, but double bare streaks on patella and tibia i., ii., and iii., single on iv.

The *abdomen* is ovate, truncate, and narrowest anteriorly. The hairing is specially bright and silky in texture, of the same colour all over, above and below. The spinnerets are half the length of the cephalothorax, tapering from base to anterior end, the first joint longer than the third and both longer than the second.

The recurvature of the cephalic fovea is a generic character that cannot be ignored. It resembles *Selenocosmia stirlingi* in general appearance, but is otherwise readily distinguishable by the straightness of the rear row of eyes, the larger number of intermediate teeth in the falx-sheath, the lip more thickly bespined, and the last joint of the spinnerets shorter than the first.

One female from Palmerston. I have named the species after the sender, Mr. P. Foelsche.

Measurements in millimetres.

		Long.	Broad.			
Cephalothorax ...	20		$\left\{ \begin{array}{l} 14 \text{ in front.} \\ 17\frac{1}{2} \text{ in middle.} \end{array} \right.$			
Abdomen	29 $\frac{1}{2}$			18 $\frac{1}{2}$		
Mandibles	12	total length.				
„	7 $\frac{1}{2}$	horizontally.				
Fangs	8					
Spinnerets.....	4 $\frac{1}{2}$, 2, 3 $\frac{1}{2}$	= 10.				
Inferior do.	2 $\frac{1}{2}$.	2 diameters apart.				
		Coxæ.	Tr. & fem.	Pat. & tib.	Metat. & tars.	
Legs	1.	10	18	18	16	= 62
	2.	9	16	16	16	= 57
	3.	7	15	15	16	= 53
	4.	8 $\frac{1}{2}$	17	17	20	= 62 $\frac{1}{2}$
Palpi	9	13 $\frac{1}{2}$	13 $\frac{1}{2}$	13 $\frac{1}{2}$	7 $\frac{1}{2}$	= 43 $\frac{1}{2}$

Subfamily DIPLURINÆ.

Genus CHENISTONIA Hogg.

CHENISTONIA TEPPERI, nov. sp. (Plate XIII. fig. 13.)

Cephalothorax dull red-brown (yellower brown in apparently rather younger specimens). Mandibles dark red-brown, with pale yellow downlying hairs and longer upstanding brown. Lip, maxillæ, sternum, and coxæ dark red-brown, with upstanding brown hairs only.

Legs and palpi paler red-brown, with long brown hairs, scopulæ yellowish grey.

Abdomen yellow above and below, with short downlying, almost golden hairs and a few longer and browner. The *cephalothorax* is nearly one-fifth longer than broad, slightly rounded at sides, a third part narrower in the front and rear than in the middle, and rising in a moderate slope from in front of a straight thoracic fovea two-thirds of the length of the cephalothorax from the anterior end.

The eye-space is on a somewhat rectangular raised prominence, which begins at a distance the diameter of the front middle eyes away from the margin of the clypeus. The front row of *eyes* is slightly procurved. The median pair, barely their diameter apart and only one-third from the nearest point of the laterals, are two-thirds the diameter of the latter, and stand on black shiny rings. The rear laterals, as far from the front laterals as the latter from the front median, are only slightly larger than the front median. The rear medians nearly touching the laterals are about as long as the front median, half their diameter from them; the rear row is distinctly recurved.

The *mandibles* are stout and rather longer perpendicularly than they are horizontally, the bristles on the fore part distinctly hardened, the fangs long and well curved. A row of eight large teeth on the inner edge of the falx-sheath and five small in the intermediate space at the lower end. The *lip* is slightly broader than long, hollowed in front and without spines. The *maxillæ* have a rather broad rounded base, are hollowed round the lip, and straight in front. They are thickly covered with spines over half the breadth of the basal area.

The *sternum* is a broad oval, slightly convex, and having the *sigilla* all marginal. The *legs* are moderately long and stout; the tarsi of all four pairs have a thick scopula, as also the metatarsi of the front two pairs. None of the tarsi but all the metatarsi are bespined, and two pairs of short spines on patella iii. All the patellæ have a broad longitudinal bare streak. The superior tarsal claws have about 8 or 10 pectinations in each of their two rows. The third claw short and bare and nearly straight.

The *abdomen* is oval, thickly covered with short furry hair intermixed with a few long single ones. The inferior spinnerets are close together. The superior, tapering from the base, are one

third the length of the cephalothorax, the third joint being rather longer than the first and the second shortest.

Five females from Ardrossan, Kangaroo Island, Burnside, and Blakiston, I have named after Mr. Tepper, who has collected them from several of the localities.

Measurements in millimetres.

		Long.	Broad.			
Cephalothorax ...	12		$\left\{ \begin{array}{l} 6\frac{1}{2} \text{ in front.} \\ 9\frac{1}{2} \end{array} \right.$			
Abdomen	13				8	
Mandibles		$7\frac{1}{2}$				
„		4 horizontally.				
		Coxæ.	Tr. & fem.	Pat. & tib.	Metat. & tars.	
Legs	1.	5	10	11	$9\frac{1}{2}$	= $35\frac{1}{2}$
	2.	5	10	10	9	= 34
	3.	$4\frac{1}{2}$	9	9	10	= $32\frac{1}{2}$
	4.	$4\frac{1}{2}$	11	11	12	= $38\frac{1}{2}$
Palpi		5	8	7	5	= 25
Superior spinnerets.....		$1\frac{1}{2}$, 1,	$1\frac{3}{4}$	= $4\frac{1}{4}$.		

DEKANA, nov. gen.

Dekana, allied to *Chevistonina* by the almost unique position of the tibial palpal spur of the male, differs from the latter in having the thoracic fovea procurved and the posterior sternal sigilla rather large and removed from the margin by a distance equal to that from the median line.

Type species, *D. diversicolor*.

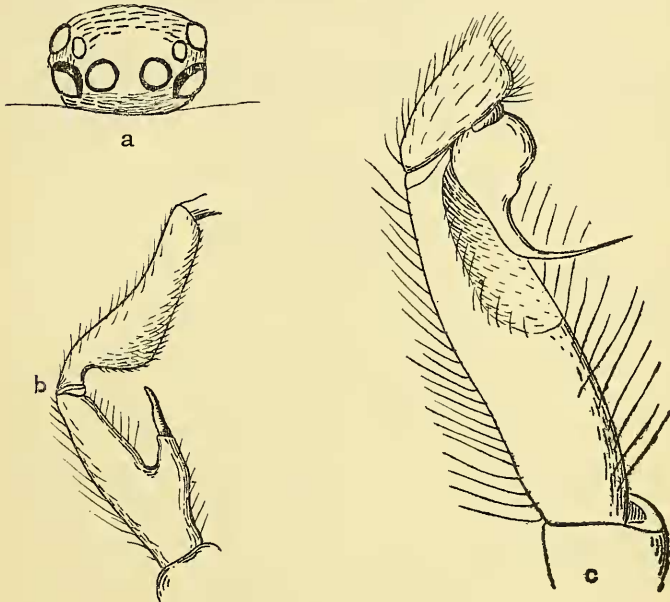
DEKANA DIVERSICOLOR, nov. sp. (Text-fig. 27.)

Male. Cephalothorax dark red-brown, mandibles black-brown, short fine downlying hair silvery white, and upstanding longer brown. Lip, maxillæ, sternum, and coxæ pale chestnut. Legs and palpi red-brown, lightening towards the extremities, scopulæ greyish yellow. Abdomen black above and underneath. Front abdominal shield, gill-covers, and spinnerets yellow, hairing silver-grey above, yellow on sides and underneath.

The *cephalothorax* is 2 millimetres longer than broad, rounded at sides, broadly truncate in front, somewhat narrower at rear end, which is concave. The cephalic part is only moderately raised up, the highest part being about the middle behind the eyes, which are situated on a well-developed oval prominence rising abruptly from almost the margin of the clypeus. The front middle *eyes*, green, the remainder being yellow, are three-fourths of their diameter apart and half that distance from the nearest point of the laterals which are $1\frac{1}{4}$ their diameter. These are set in a plane perpendicular to the cephalic surface, and being at the lower part of the prominence make the row, which is straight seen from above, rather strongly procurved from in front.

The rear row is recurved, the laterals half their diameter from those of the front row are the same in length as the front median. The somewhat square rear median are two-thirds the diameter of the laterals, nearly close up to the latter and half their diameter from the front median. The eye-space is 18×7 , the whole prominence 18×10 . The cephalic fovea is lunate and very clearly procurved.

Text-fig. 27.

*Dekania diversicolor.*

a, eyes; *b*, tibia and metatarsus i. of male; *c*, male palp.

The *mandibles* are rather long compared with their breadth, and stand out horizontally half the length of the cephalothorax. There are nine large teeth on the inner falx-sheath, five quite small in an intermediate row at the lower end. The *lip*, straight at the sides, hollowed in front, is broader than long and has one spine only visible about the middle.

The *maxillae* convex at the base over half their width are thence hollowed round the lip and are straight in front. They are somewhat sparsely bespined over the whole basal area. The *sternum* is ovate, straight in front, broadest at rear, slightly convex. The posterior sternal sigilla are long and narrow halfway between the margin and the median line. The *legs* are only moderately stout, the tarsi being all scopulated and without spines; the metatarsi are all bespined, those of the front two pairs scopulated, and the

anterior end of the two rear pairs. The metatarsus of the front pair, characteristically protuberant on the under side, springs from a narrow base, and that of the second pair is also distinctly curved.

The tibial spur is rather nearer to the base than to the front end and quite as well formed as in *Chenistonia maculata*. The superior tarsal claws are pectinated in two rows of about nine teeth in each. The third short and bare.

As in *Chenistonia* the metatarsal joint of the *palpi* is somewhat long, and cut straight across the end. The stigma is curved and finely pointed, slightly longer than the palpal bulb. The *abdomen* is oval, rather long and narrow, the yellow chitinous shield and gill-coverings being very prominent on the black ground as also the spinnerets. The inferior pair of spinnerets are well developed, $1\frac{1}{2}$ diameters apart at the base. The first joint of the superior pair is $1\frac{1}{2}$ times the length of the second, the third being unfortunately destroyed.

One male only from Deka Station, near Blackhall.

Measurements in millimetres.

	Long.	Broad.				
Cephalothorax ...	9	5 in front. 7				
Abdomen	8					
Mandibles	$6\frac{1}{2}$					
„	$4\frac{1}{2}$	horizontally.				
		Coxæ.	Tr. & fem.	Pat. & tib.	Metat. & tars.	
Legs	1.	$4\frac{1}{2}$	8	9	8	= $29\frac{1}{2}$
	2.	4	8	$7\frac{1}{2}$	8	= $27\frac{1}{2}$
	3.	$3\frac{1}{2}$	$6\frac{1}{2}$	$6\frac{1}{2}$	8	= $24\frac{1}{2}$
	4.	$3\frac{1}{2}$	9	9	10	= $31\frac{1}{2}$
Palpi	4	7	7	$2\frac{1}{2}$	=	$20\frac{1}{2}$
Superior spinnerets.....	$1\frac{1}{2}$, 1, —.					

Genus ANAME L. Koch.

ANAME TASMANICA, nov. sp. (Plate XIII. fig. 12.)

Female. Cephalothorax, mandibles, lip, maxillæ, sternum, legs, and palpi a rather dingy yellow-brown, in most parts sparsely clothed with long upstanding dark brown hairs. The abdomen is a dingy greyish yellow, with short fine downlying yellow hairs interspersed on upper side, with long thin upstanding bristles on round roots. Spinnerets and gill-covers yellow; front median eyes deep orange, with black centres on black rims, other eyes pale yellow.

The *cephalothorax* is two millimetres longer than broad, slightly raised from in front of the thoracic fovea, which is procurved, about equally narrowed at front and rear.

The *eyes* are on a well-raised tubercle, the breadth of the front median eyes from the margin of the clypeus. The front row is straight, or from in front slightly procurved, the median pair three-fourths of their diameter apart. The laterals one-half that

distance away are one-third larger. The rear row is recurved. The laterals, touching the front laterals, are the same diameter as the front median, the oval rear median, two-thirds same diameter, almost touch the side, and are half the diameter of the front median away from them. The eye-space is 15×7 , the tubercle $15 \times 11 \frac{\text{mm.}}{10}$.

The *mandibles* are horizontally slightly less than half the length of the cephalothorax. They have seven large teeth on inner margin of the falx-sheath and no intermediate. The *lip* is convex, somewhat broader than long, hollowed in front and without spines.

The *maxillæ* are straight in front, broadly rounded at base and profusely bespined over the whole basal area. The *sternum* is broadly oval, truncate in front, the posterior sigilla removed from the margin.

The *legs* are moderately stout, the tarsi of the front two pairs being scopulated and the metatarsi of the same partially so as well. On the third pair of tarsi is a faint indication of a scopula below the bristles. None of the tarsi are bespined, but all metatarsi and patellæ. The superior tarsal claws are pectinated in two rows with about seven to nine teeth in each. The superior claw is bare and very small. There are spines in a scopula on the metatarsal joint of the female palpi. The *abdomen* is oval, with thin downlying hairs and fine bristles on the upper surface.

The superior *spinnerets* are half the length of the cephalothorax, tapering, the first and third joints each about twice the length of the second. The inferior are $1\frac{1}{2}$ diameters apart.

This species is easily distinguishable from *A. pallida* L. Koch, of which the front median eyes are also near together, by having no median or side stripes on the abdomen, and from my *A. grisea* by its much larger size, smaller rear eyes, and more compact eye-space, besides the falx-teeth, tarsal claws, and patellar spines.

One female from Table Cape, north coast of Tasmania, collected by Mr. Dove.

Measurements in millimetres.

	Long.	Broad.				
Cephalothorax ...	10	$\left\{ \begin{array}{l} 5 \text{ in front.} \\ 8 \end{array} \right.$				
Abdomen	12		8			
Mandibles	$6\frac{1}{2}$					
„	$4\frac{1}{2}$	horizontally.				
			Coxæ.	Tr. & fem.	Pat. & tib.	Metat. & tars.
Legs	1.	5	9	9	8	= 31
	2.	$4\frac{1}{2}$	8	8	8	= $28\frac{1}{2}$
	3.	4	7	7	9	= 27
	4.	$4\frac{1}{2}$	9	9	10	= $32\frac{1}{2}$
Palpi		5	6	6	4	= 21
Superior spinnerets.....		2, 1, 2 = 5.				

EXPLANATION OF PLATE XIII.

Fig. 1.	Eyes ($\times 10$) of <i>Blakistonia aurea</i> ,	σ ,	p. 133.
2.	" "	" "	σ , p. 132.
3.	" "	<i>Aganippe pulleinei</i> ,	σ , p. 128.
4.	" "	" "	σ .
5.	" "	" "	<i>latior</i> , p. 126.
6.	" "	" "	<i>subtristis</i> , p. 126.
7.	" "	" "	<i>sneatonii</i> , p. 126.
8.	" "	<i>Idiosoma sigillatum</i> ,	p. 125.
9.	" "	<i>Anidiops manstridgei</i> ,	p. 125.
10.	" "	<i>Dyarcyops andrewsi</i> ,	p. 130.
11.	" "	<i>Arbanitis gilliesii</i> ,	p. 125.
12.	" "	<i>Aname tasmanica</i> ,	p. 140.
13.	" "	<i>Chenistonia tepperi</i> ,	p. 137.

June 17, 1902.

Prof. G. B. HOWES, D.Sc., LL.D., F.R.S., Vice-President,
in the Chair

The Secretary read the following report on the additions to the Society's Menagerie during the month of May 1902:—

The registered additions to the Society's Menagerie during the month of May 1902 were 141 in number. Of these 26 were acquired by presentation and 64 by purchase, 6 were born in the Gardens, 44 were received on deposit, and 1 in exchange. The total number of departures during the same period, by death and removals, was 131.

Amongst the additions attention may be specially directed to:—

1. A fine example of the scarce and little-known Southern Anaconda (*Eunectes notatus* Cope) from Paraguay, deposited by the Hon. Walter Rothschild, F.Z.S., May 2nd, new to the Collection.

2. A female Hartebeest from Angola, acquired by purchase May 13th, apparently not different from the species of the Cape Colony, *Bubalis caama*.

3. Six Ruddy Flamingos (*Phoenicopterus ruber*) from Cuba, purchased May 29th.

4. Three American Bisons (*Bison americanus*) from the Woburn Herd, presented by the President of the Society, and received May 31st.

Mr. Oscar Neumann exhibited some specimens of Monkeys (*Cercopithecus*) and Hyraxes (*Procavia*), belonging to species discovered during his recent journey through North-east Africa and during his earlier journey through German and British East Africa. Among the Hyraxes exhibited were examples of *Procavia erlangeri*, the black-headed Hyrax from Harar and the sources of the Wabbi, *Procavia matschiei* from the south coast of Lake Victoria, and *Procavia (Heterohyrax) thomasi* from Kaffa and